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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,401	04/08/2004	Stylios Panaghe	7579	8464

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EXAMINER

JEFFERY, JOHN A

ART UNIT PAPER NUMBER

3742

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/820,401	Applicant(s) PANAGHE, STYLIANOS	
	Examiner John A. Jeffery	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040408</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Title of Invention

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Radiant Electric Heating Element With Printed Heating and Ceramic Tracks."

Abstract

The abstract of the disclosure is objected to because of the following informalities:

In line 2, "comprising" must be changed to "comprises." In line 6, "to seal same" must be changed to "sealing the heating track" for clarity. Correction is required. See MPEP § 608.01(b).

Disclosure Objections

The disclosure is objected to because of the following informalities:

Headings must be provided for each respective section of the specification (e.g., "BACKGROUND OF THE INVENTION", "BRIEF SUMMARY OF THE INVENTION", "BRIEF DESCRIPTION OF THE DRAWINGS", "DETAILED DESCRIPTION OF THE INVENTION", etc.). Appropriate correction is required.

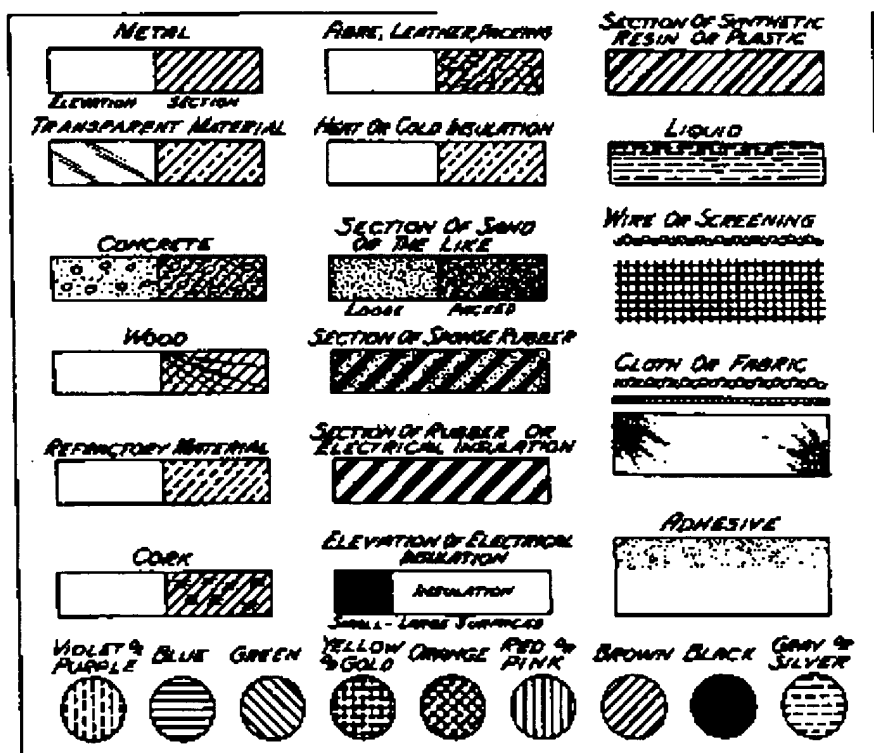
Art Unit: 3742

Drawing Objections

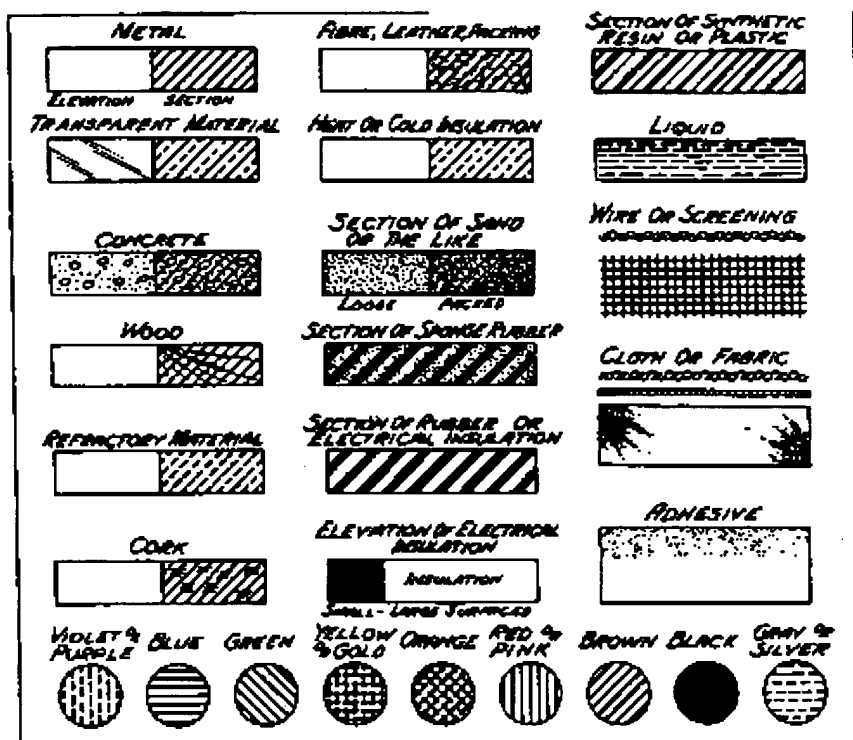
The drawings are objected to because of the following informalities:

Fig. 1 and 2: Proper cross-sectional hatching is required to properly denote insulative materials for (1) ceramic tracks 3 and 4, and (2) dielectric layer 6 in accordance with MPEP 608.02 (see the drawing below for proper hatching examples). The layers are currently incorrectly hatched for metal.

Applicant must also enlarge Fig. 2 for clarity so that proper hatching is legible within each layer's thickness.



Art Unit: 3742



The drawings are also objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,

- (1) the means for supporting at least one slice of bread (claim 13)
- (2) the pair of radiant heating elements placed in mutually parallel relationship (claim 14)
- (3) browning sensor including a scanning detector (claims 15 and 16)
- (4) means to auto-zero the scanning detector (claim 17)
- (5) the combined and multiple combined ceramic and heating tracks printed on opposed surfaces of the base plate (claims 5, 6, 11, and 12)
- (6) means to adjust the distance between the parallel pair of elements (claim 14)

Art Unit: 3742

must be all be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

For items (1) and (2) above, applicant must provide a figure similar to Fig. 2 of U.S. Re. 23,555 to Mochel to properly show these features. For items (3) and (4), applicant must provide figures similar to Figs. 1 and 2 of GB2199733. Both patents are excellent examples of proper drawings of such features and are hereby made of record.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 13-17 are objected to because of the following informalities:

Claim 13: In line 1, "on" must be changed to "one." Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1, 2, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garaway (US 2,859,321) in view of Demin (US 5,252,809). Garaway (US 2,859,321) discloses a radiant heater comprising steel base plate 16, first ceramic "track" 22 formed thereon, an electric heater "track" 24 printed on ceramic layer 22, and a ceramic "track" 34 that, together with ceramic layer 22, surround and seal the electric heater. See col. 2, lines 6-38 and Fig. 5.

The claims differ from Garaway (US 2,859,321) in calling for the ceramic tracks to be printed. Printing thin insulative layers to surround a printed electric heating element, however, is well known in the art. Demin (US 5,252,809), for example, discloses in col. 4, lines 28-42 (1) printing insulative layer 3 to a steel substrate 1, (2)

Art Unit: 3742

printing heater 2 to layer 3, and (3) printing insulative layer 4 to heater 2 all via a silkscreening process. Such a technique enables precisely controlling the geometry and shape of the respective layers via silkscreening methods. In view of Demin (US 5,252,809), it would have been obvious to one of ordinary skill in the art to print the ceramic layers of Garaway (US 2,859,321) to more precisely control the geometry and shape of the respective layers via silkscreening methods.

Regarding claim 7, although layers 22 and 34 in Garaway (US 2,859,321) are not exactly the same material, the materials comprising the respective ceramic layers are nonetheless "basically the same" as noted in col. 2, lines 33-35. Moreover, applicant notes in the instant specification on Page 5, line 15 that high temperature insulating material 4 (upper layer) is "usually the same material" (emphasis added) as ceramic track 3. In short, "usually" does not mean "always"; accordingly, the upper insulative layer does not necessarily have to comprise the same material as the lower insulative layer. Therefore, no criticality is seen in the layers comprising exactly the same material. Thus, a material for the upper insulative layer that is "basically the same" as the lower insulative layer -- such as the upper layer disclosed by Garaway (US 2,859,321) -- would suffice notwithstanding the layers' slight differences.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garaway (US 2,859,321) in view of Demin (US 5,252,809) and further in view of Glynn (US 2,673,142). The claim differs from the previously cited prior art in calling for the combined ceramic and heater tracks to follow a meandering pattern. Forming combined

Art Unit: 3742

electric heater and insulative coatings such that both layers follow a meandering pattern, however, is well known in the art. Glynn (US 2,673,142), for example, zigzags a combined insulative and heating track B, C printed on base plate A. See Figs. 1 and 2. By zigzagging the combined heater and insulation tracks, less coating material is needed to install the insulated heater on the base plate as compared to structures such as Garaway (US 2,859,321) where the entire base plate is coated with insulation. In view of Glynn (US 2,673,142), it would have been obvious to one of ordinary skill in the art to zigzag the combined heater and insulation tracks in the previously described apparatus so that less coating material is needed to install the insulated heater on the base plate as compared to structures such as Garaway (US 2,859,321) where the entire base plate is coated with insulation.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garaway (US 2,859,321) in view of Demin (US 5,252,809) and further in view of Needham (US 2,939,807). The claim differs from the previously cited prior art in calling for a ceramic layer printed or coated onto the face of the base plate remote from the ceramic and heating tracks. Providing such a remote coating, however, is well known in the art. Needham (US 2,939,807) discloses an insulative coating 18 formed on the surface of base plate 10 remote from the heater 14 and insulation layer 20 in Fig. 2. Such an arrangement further protects the base plate from corrosion. In view of Needham (US 2,939,807), it would have been obvious to one of ordinary skill in the art to provide an

Art Unit: 3742

auxiliary ceramic layer in the previously described apparatus to further protects the base plate from corrosion.

Claims 5, 6, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garaway (US 2,859,321) in view of Demin (US 5,252,809) and further in view of Trist (US 2,495,788). The claims differ from the previously cited prior art in calling for heater and ceramic heating tracks printed on opposed faces of the base plate. But mounting thin electric heating elements on opposite sides of a base plate is well known in the art. Trist (US 2,495,788), for example, discloses in Fig. 5 providing electric heating elements 19 on opposite sides of base plate 18. See also col. 2, lines 32-43 as well as Fig. 9 and col. 6, lines 3-15 (insulated heater embodiment). Such an arrangement enables bi-directional heating by providing an electric heating element on both faces of the base plate. In view of Trist (US 2,495,788), it would have been obvious to one of ordinary skill in the art to provide an insulated heater on both sides of the base plate in the previously described apparatus to enable bi-directional heating.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garaway (US 2,859,321) in view of Demin (US 5,252,809) and further in view of Martin et al (US 3,978,315). The claim differs from the previously cited prior art in calling for cleaning the base plate prior to printing the first ceramic track. But cleaning base plates prior to applying insulative and heater layers thereon is well known in the art. Martin et al (US 3,978,315), for example, discloses in col. 9, lines 40-45 that the base plate is first

Art Unit: 3742

cleaned prior to applying insulative and electric heater layers. Such a technique removes contaminants from the substrate prior to forming the layers thereon. In view of Martin et al (US 3,978,315), it would have been obvious to one of ordinary skill in the art to clean the base plate prior to forming insulative and heater layers thereon in the previously described apparatus to remove contaminants from the substrate prior to layer formation.

Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Jenlis (US 6,125,234) in view of Garaway (US 2,859,321) and further in view of Demin (US 5,252,809). de Jenlis (US 6,125,234) discloses a toast making appliance with a pair of parallel radiant heating panels 1a, 1b with a thin electric heater coating thereon. Bread P is mounted on support 15 and toasted by heat radiated from the elements on both sides of the bread. See Figs. 1 and 2. A browning sensor detects the bread's change in color as it toasts. See col. 4, lines 53-58.

The claims differ from de Jenlis (US 6,125,234) in calling for the radiant electric heating element of claim 1. But such electric heating elements for planar radiant heaters are well known in the art. Garaway (US 2,859,321), for example, discloses a radiant heater comprising steel base plate 16, first ceramic "track" 22 formed thereon, an electric heater "track" 24 printed on ceramic layer 22, and a ceramic "track" 34 that, together with ceramic layer 22, surround and seal the electric heater. See col. 2, lines 6-38 and Fig. 5. Such an arrangement provides an effective radiant heating element that is completely sealed from the surrounding environment as well as electrically

Art Unit: 3742

insulated thus rendering the element impervious to moisture, fumes, and corrosion.

Garaway (US 2,859,321), col. 1, lines 28-30.

In view of Garaway (US 2,859,321), it would have been obvious to one of ordinary skill in the art to provide such a planar radiant heating element in the apparatus of de Jenlis (US 6,125,234) to provide an effective radiant heating element that is completely sealed and insulated, thus rendering the element impervious to moisture, fumes, and corrosion.

Although the ceramic tracks of Garaway (US 2,859,321) are not printed, printing thin insulative layers to surround a printed electric heating element, however, is well known in the art. Demin (US 5,252,809), for example, discloses in col. 4, lines 28-42 (1) printing insulative layer 3 to a steel substrate 1, (2) printing heater 2 to layer 3, and (3) printing insulative layer 4 to heater 2 all via a silkscreening process. Such a technique enables precisely controlling the geometry and shape of the respective layers via silkscreening methods. In view of Demin (US 5,252,809), it would have been obvious to one of ordinary skill in the art to print the ceramic layers of Garaway (US 2,859,321) to more precisely control the geometry and shape of the respective layers via silkscreening methods.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over de Jenlis (US 6,125,234) in view of Garaway (US 2,859,321), Demin (US 5,252,809), and further in view of Alsafadi (US 6,323,467). The claims differ from the previously cited prior art in calling for means to adjust the distance between the parallel elements. But adjusting

Art Unit: 3742

the distance between two parallel radiant heating elements in a toaster is well known in the art. Alsafadi (US 6,323,467), for example, discloses in Fig. 2a horizontally adjusting radiant heating arrays 210 via a mechanical linkage. Note horizontal double arrows in the figure. As noted in col. 4, lines 11-24, not only does such an adjustment enable varying the intensity of heat applied to the bread (and ultimately the browning pattern), it also enables the toaster to accommodate bread slices of different widths. In view of Alsafadi (US 6,323,467), it would have been obvious to one of ordinary skill in the art to adjust the spacing between the parallel radiant heaters in the previously described apparatus to not only vary the intensity of heat applied to the bread (and ultimately the browning pattern), it also enables the toaster to accommodate bread slices of different widths.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Jenlis (US 6,125,234) in view of Garaway (US 2,859,321), Demin (US 5,252,809), and further in view of GB2199733. The claims differ from the previously cited prior art in calling for the browning sensor to comprise an IR emitter-receiver scanning detector. But such detectors are well known in the art as evidenced by GB2199733 noting IR source 18 and detector 20. See Page 4, line 7 - Page 5, line 20. Such a detector, which detects light in the infrared wavelengths, enables correlation between the reflected radiant energy and the degree of browning as the bread toasts. In view of GB2199733, it would have been obvious to one of ordinary skill in the art to

Art Unit: 3742

utilize such a detector in the previously described apparatus to enable correlation between the reflected radiant energy and the degree of browning as the bread toasts.

Regarding claim 17, because GB2199733 stores an initial value of energy reflectance from the bread upon commencing heating, and compares later values of reflectance to the initial stored value, storing the initial value therefore is equivalent to the "auto-zero" feature disclosed in the specification. The stored initial reflectance value of GB2199733 is dictated by the initial color of the bread. Thus, the initial stored value varies -- and therefore recalibrates -- every time the apparatus is used. Therefore, the browning control system of GB2199733 is automatically responsive to breads of different color upon initial operation. and effectively recalibrates the

Other Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant should (1) separately consider the art, and (2) consider the art together with the previously cited prior art for potential applicability under 35 U.S.C. §§ 102 or 103 when responding to this action.

US 722, US 025, US 517, US 228, US 148 disclose thin electric heaters and insulative layers relevant to the instant invention. US Re. 555, US 404, US 692, US 554, US 888 disclose toasters relevant to the instant invention.

Art Unit: 3742

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Jeffery whose telephone number is (571) 272-4781. The examiner can normally be reached on Monday - Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans, can be reached on (571) 272-4777. All faxes should be sent to the centralized fax number at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "John A. Jeffery", with a stylized flourish at the end.

**JOHN A. JEFFERY
PRIMARY EXAMINER**

2/17/05